

Chapter 8: Submittals

8.1 Requirements for Submittals

- ☐ Stamp or label the title sheet in each TMP Submittal with the corresponding submittal. (i.e. Staging Concept, etc.)
- ☐ Submit half-size copies of the previous marked up submittal.
- ☐ Submit half-size copies of each required submittal for review and approval. The # of copies required for each submittal will be agreed on at the TMP - Scoping Meeting.
- ☐ Submit an electronic copy in PDF file format of the TMP at each required submittal. (PEF ONLY)
- ☐ Provide half-size copies of the TMP for distribution at the FDFI, CFI, PLFI, ICR, and ECR meetings. The number of copies required for each submittal will be agreed on at the TMP Scoping Meeting.

NOTE: Each Submittal must be reviewed and approved prior to distribution or presentation at any meeting.

- ☐ Make timely Submittals of the Transportation Management Plan according to the schedule agreed upon.
- ☐ Advise WZTC Lead Project Personnel a minimum of one (1) week in advance of each planned submittal if adjustments of the dates are necessary.

8.2 1st Submittal – Traffic Management Concept

This submittal is required for all projects with the exception of the very basic and least complex of projects. The decision whether this submittal is required or not will be made at the Scoping Meeting.

I. PURPOSE:

The purpose of the Traffic Management Concept is to organize and sequence the construction requirements in a safe and efficient manner. It is utilized to determine and convey the design decisions that are necessary to provide constructability of the project, while providing a method to maintain a safe flow of traffic through the construction zone. The Traffic Management Concept shall be developed in a manner that will provide the Contractor with the flexibility to work simultaneously in as many areas of the project as possible, and to expedite the project's completion. In doing so, the major items of work are to be identified and how they impact traffic. In addition, other "features" such temporary pavement, shoring, alignments, drainage, signals etc. are to also be identified and shared with the appropriate Division personnel, and also other NCDOT design sections and consultants that may be involved.

The Traffic Management Concept plan will be presented at the Final Design Field Inspection (FDFI) or Combined Field Inspection (CFI) for concurrence or. A separate constructability meeting is strongly recommended for complex projects. The need for a separate constructability meeting should be determined at the project scoping meeting. It's extremely important that all affected parties understand this Traffic Management Concept as it may affect the accuracy and completion of their plans, and therefore their attendance at the presentation of the Traffic Management Concept is very important, so that their requirements and suggestions can be incorporated into the Traffic Management Plan. See Requirements for all Meetings

II. SUBMITTAL REQUIREMENT: *Also, See Requirements for all Submittals*

The Traffic Management Concept plan should consist of the following elements:

- ☐ Written Traffic Management Concept Staging
- ☐ Traffic Management Concept drawings (Overview Drawings)
- ☐ Cross Section Views (Identifying Work areas and Traffic patterns)

Written Traffic Management Concept Staging:

- The Plan Developer shall provide a simple written description that “outlines” the sequence of work operations that are to take place in each “Phase” of construction and answers the following questions: What/Where is construction is taking place?
- What traffic control method is being used (lane closures, road closure, away from traffic, flaggers, etc.)?
- Where is traffic at the end of the workday?

Example:

Away from traffic, construct the following: -L-, -Y1-, -Y2- and -Y3- (include common road names). Traffic remains on existing alignment during this construction (See TCP-X).

OR

Using flaggers and lane closures, construct the tie-in of proposed -Y2- with existing -Y2-. Traffic will be on proposed -Y2- alignment at the end of the workday (See TCP-X).

The written Traffic Management Concept should be placed on the Traffic Management Concept drawings (Overview Sheets).

Traffic Management Concept Drawings (Overview Drawings):

Provide easy to understand overview drawings that show where construction is occurring and where traffic is being maintained during each specific phase of construction. **These drawings are intended to communicate a concept, not a final detailed plan; therefore, keep the**

drawings as simple as possible. Each phase of work shall be shown on separate drawings. The use of separate, supplemental detail sheets may be necessary for more complicated areas.

Format / Layout (roll-out plots and/or border sheets) shall be determined at the TMP – Scoping Meeting. All drawings shall utilize appropriate scales that convey a clear and understandable view of the construction and location of traffic for each phase. "For complicated plans (with a large number of sheets, interchanges, flyovers, ramps and loops, etc.), it is helpful if the TMP sheets appear much the same as the roadway plan sheet for the area being described (scale, orientation, match lines, etc.). Details may be used for clarification, on the same sheet or on another, when the scale is too small to clearly show the intended construction.

All drawings, at a minimum shall show the following:

- ☐ Existing roads
- ☐ North Arrow
- ☐ Traffic flow arrows
- ☐ Existing and proposed road alignment designations **along with their common names**
- ☐ Horizontal alignment station tick labels and station ticks
- ☐ Driveways
- ☐ Cross Section views and locations (See category below)
- ☐ Match lines / Break lines
- ☐ Proposed and completed construction for the specific phase of work
- ☐ Provide any additional information that helps to explain the project

Show only areas under construction shaded in gray utilizing MicroStation WZTC Level: Gray Area Fill Shapes. Minimal color may be used on the Staging Concept Drawings if determined at the TMP- Scoping Meeting.

All areas that have been completed shall show the proposed features, and shall not be shaded.

Cross Sections:

Provide cross sections that illustrate the spatial relationship (both horizontal and vertical) with dimensions between traffic lanes and the proposed construction during each specific phase of construction. Show the traffic control devices to be used to separate opposing travel lanes and/or to separate traffic from construction. Identify each station location or station range, along with traffic flow arrows, road names/designations, and other features necessary to clearly define the elements drawn within each cross section view. For Bridge and/or Culvert sites, clearly identify the width of the proposed bridge or culvert that is to be constructed, the working room, traffic control device and offset, and width of travel lanes. Place the cross sections either on the overview or detail sheets.

Additionally the Traffic Management Concept plan shall contain the following if applicable:

- ☐ The location of any temporary pavement, temporary shoring and/or temporary signals needed during construction.
- ☐ Any potential needs and methods that are required for maintenance of pedestrian/bicycle traffic during construction.
- ☐ Any potential off-site detour route(s) and/or Oversize/Overweight detours required during construction. Ensure that the detour route's pavement conditions are able can handle the additional traffic. (i.e. bridge weight limits, widths, roadway condition and widths, flooding problems, upgrades required, etc.)
- ☐ Identify any Lane and Road Closures (both intermittent and/or long term) that may be necessary, make initial recommendations for lane closure, road closures, continuous operations, and other lane closure/road closures restrictions. If a long term closure is needed, then begin discussions on the amount of time required for this activity. Coordinate these with the Contract Time Officer
- ☐ Temporary drainage issues (deep cut, boring & jacking, removal/plugging, curb and gutter, etc.)
- ☐ Drainage installation (steel plates, precast structures, stage construction)
- ☐ Any potential temporary crossovers or on-site detour route(s) used during construction of the project
- ☐ Work zone protection (PCB, Water Filled Barrier, Guardrail, Drums, etc.)
- ☐ Utility issues (water & sewer – if available)
- ☐ Night work (may affect phasing)/Lighting
- ☐ Retaining walls
- ☐ Wedging, Pavement Removal & Replacement, Undercut, Tie-in areas (incidental stone, etc.)
- ☐ Roadway Typical Section (i. e. pavement design, drop-off's, soil stabilization, curing times, asphalt vs. concrete, milling, condition of existing shoulders, curb & gutter)
- ☐ Balancing Earthwork (cut/fill), Temporary slopes (confirm maximum allowable slope)
- ☐ Work Zone access (hauling, material delivery, staging area, etc.)
- ☐ Bridge Construction (girder installation, temporary bents, staged construction, bent construction, etc.)
- ☐ Overhead Signs (spanning entire travel way, cantilevered)

Submittal Package:

Items to be included with the submittal package should be discussed and agreed upon at the project scoping meeting. Submittal may include some or all of the items listed below. Submit items to the WZTC Project Design Engineer for review no later than the date agreed upon at the TMP - Scoping Meeting. If the project schedule has changed since the TMP - Scoping Meeting, contact the WZTC Project Design Engineer to discuss if the submittal date may be adjusted. Typically, the 1st Submittal –Traffic Management Concept is due no later than one month prior

to the Final Design or Combined Field Inspection meeting. (For PEF's, this submittal date is typically two months prior to the Final Design or Combined Field Inspection meeting).

- ☐ Hard copy of the roadway plans and cross-sections.*
- ☐ Project File*
- ☐ Half-size copy(s) of the Traffic Management Concept.
- ☐ Traffic Counts, if applicable and any recommendations for time restrictions.
- ☐ Notes from TMP - Scoping Meeting.
- ☐ Notes from Site Visit (if applicable).
- ☐ Written Justification of Engineering Judgment
- ☐ Temporary Shoring Investigation (if applicable).
- ☐ List of items/questions to be discussed at the FDFI/CFI.

* This item may not be required from PEFs.

Approval of this submittal will complete the Traffic Management Concept of the Transportation Management Plan.

(PEF ONLY) Payment for the Traffic Management Concept will not be approved until after the FDFI or CFI meeting.

8.3 2nd Submittal – Midpoint

The 2nd Submittal-Midpoint is optional on some less complex projects. The decision on whether or not the Midpoint submittal is required will be made at the Scoping Meeting.

I. PURPOSE:

This submittal should consist of the TCP developed from either the TMP Scoping Meeting, the 1st Submittal – Staging Concept or both, as applicable, and include all revisions requested during those reviews.

II. SUBMITTAL REQUIREMENT: *Also, see Requirements for All Submittals*

The 2nd Submittal-Midpoint should contain, but not be limited to the following:

General:

- ☐ The Layout of the TCP agreed upon in the Transportation Management Plan – Scoping Meeting.
- ☐ All revisions to the Traffic Control Plan requested from the Staging Concept Submittal Review, field inspections and/or constructability meetings if applicable.
- ☐ Details developed from the Staging Concept. NOTE: Overviews may be included as well depending on the layout and complexity.

Title Sheet:

- ☐ Finalized listing of applicable Roadway Standard Drawings.
- ☐ Index of Sheets.
- ☐ Indicate the Midpoint Submittal stamp (cell) on this sheet.

Project Notes Sheet:

- ☐ General Notes
 - Include a finalized list of Project Notes specific to the project on the Project Notes Sheet.
 - Include all final lane and road closure time restrictions with this submittal.
- ☐ Local Notes
 - Include a finalized list of Local Notes specific to the project on the Project Notes Sheet.

NOTE: If Local Notes are used, they shall be referenced in the Phasing.

Traffic Control Phasing:

The phasing at this submittal shall be expanded from the brief summary described in the Staging Concept including any requested changes made at that time.

- ☐ Address the following three main points when developing the Phasing:
 - What construction is taking place?
 - What Traffic Control method is used to maintain traffic during this construction; (i.e. is construction away from traffic or are lane closures and flaggers used during construction).
 - Where is traffic at the end of the workday?
- ☐ Include a written description of how traffic will be maintained during each phase and step of construction. Refer to the proper Roadway Standard Drawing as applicable to describe how traffic will be maintained during construction at that time.
- ☐ Refer to the traffic control details and cross section view sheet numbers.
- ☐ Step out traffic shifts.
- ☐ Describe installation of temporary and final traffic signal(s).
- ☐ Refer to the Roadway, Signal, Signing, Structure and Pavement Marking Plans when relevant.
- ☐ Identify any Intermediate Contract Times (ICT's) needed throughout the project's duration. In addition, coordinate with field personnel and the Contract Time Engineer in Project Services concerning any issues pertaining to the duration and the scope of work included in these Intermediate Contract Times. Place a box around ICT's (see example below).

NOTE: As mentioned, Phasing is more detailed and specific than the summary described in the Staging Concept review submittal. For example the following could be written:

Working in a continuous manner, complete the work required in Step 1 in X days:

Step 1: -Using Roadway Standard Drawing 1101.02, sheet 1 of 9, complete the following:

- Construct the tie-in of proposed -Y2- and existing -Y3- from -Y2- Sta. X+XX to -Y2- Sta X+XX up to but not including the final surface layer. (See TCP-X).
- Place the final surface layer, Pavement Markings and Pavement Markers on -Y2-, Sta X+XX to Sta X+XX, and -Y3-, Sta X+XX to Sta X+XX.
- Activate the final traffic signal (Signal # XXXXX - See Signal Plans) at the -Y2- / -Y3- intersection. (See Final Pavement Marking Plans)
- Open traffic to the final pattern.

Traffic Control Overviews:

At this submittal, Overviews, if used, should show any proposed work that is started, under construction or completed during each particular phase of construction. Overviews may also show the location of Traffic Control Devices such as: drums, barricades, temporary signals, portable concrete barrier (PCB), etc.

Traffic Control Details:

- ☐ Include detailed plan views and cross section views that illustrate where construction is occurring and how traffic is maintained in relation to the construction.
- ☐ Shade **only** proposed work that is started, under construction or completed during each particular step or phase of construction. Previously completed work is shown with solid lines and is not shaded.
- ☐ Each construction phase shall be shown on separate drawings. Show directional flow arrows indicating traffic patterns and include a north arrow. Show all necessary traffic control devices, required signing, and any temporary pavement markings on detail sheets and in cross section views. Label all roads (include all known designations, names, and alignment data) and other relevant features described below:
 - Maintained Lane Widths
 - Temporary Pavement Marking and Marker Designation Labels
 - Match Lines
 - Additional Legends if applicable
 - TIP (if applicable) and Sheet Numbers, etc.
- ☐ Label all information on the detail drawings that has been referred to in the Phasing (i.e. station numbers, etc.)

Off-site Detour Signing and Temporary Guide Signs:

- ☐ Whenever an off-site detour is required and the Contractor is responsible for installing, furnishing, and removing the off-site detour signing, the Plan Developer shall obtain the required off-site detour sign designs or temporary guide signs from the Signing and Delineation Section when applicable.
- ☐ Include all off-site detour signing detail sheets with this submittal. These detail sheets will show the locations and type of signs used.

Advance Work Zone Warning Signs:

- ☐ Include all Advance Work Zone Warning Sign detail sheets applicable to the project.

NOTE: Include all notes found on the Advance Work Zone Warning Sign detail sheets within the Project Notes section of your plans if the Advance Work Zone Warning Signs are depicted on your plan details instead.

Additionally, the information identified in the 2nd Submittal shall include, but is not limited to, the following:

- ☐ All time restrictions used in the Construction Phasing and Project Notes. (Based on discussions)
- ☐ Any speed reduction and/or \$250.00 penalty ordinance as coordinated with field personnel and the Regional Traffic Engineer.
- ☐ Areas which require temporary shoring, (if not identified in the Staging Concept Submittal).
- ☐ Areas which require temporary drainage, (if not identified in the Staging Concept Submittal).
- ☐ Coordination with the Utility Section and identification of any utility conflicts, if applicable.
- ☐ Any temporary alignment for on-site detours or temporary pavement. These temporary alignments should be coordinated with Roadway Design Personnel, (if not identified in the Staging Concept Submittal).

Submittal Package:

Submit the 2nd Submittal - Mid-point Traffic Management Plan for review and approval by the date agreed upon in the TMP-Scoping Meeting.

Approval of this submittal will complete the 2nd Submittal of the Traffic Management Plan.

(PEF ONLY) Payment beyond the 2nd Submittal Mid-point will not be approved until after the FDFI, CFI or ICR meeting.

NOTE: Most projects require an Internal Constructability Review Meeting unless otherwise indicated by WZTC lead personnel at the TMP - Scoping meeting.

8.4 3rd Submittal – Pre-Final

The 3rd Submittal - Pre Final TMP should basically complete the TMP and be taken to the Pre Let Field Inspection (if applicable) to discuss with construction personnel.

I. PURPOSE:

This submittal shall consist of the final TMP as developed from requested revisions or comments from previous meetings and reviews.

II. SUBMITTAL REQUIREMENT: See Requirements for all Submittals

This Submittal will be required for all TIP projects, and shall include the following:

- ☐ All final Traffic Control Plan Detail Sheets.
- ☐ All revisions to the Traffic Control Plan as requested from previous review.
- ☐ All requirements from previous submittals even if bypassed for your particular project.
- ☐ An Engineer's Estimate that includes calculations of estimated quantities for Traffic Control items. (Submit all calculations and or worksheets providing the basis of the estimate quantities submitted).
- ☐ A list of any Project Special Provisions (Standard and Non-Standard) and Specifications that will be needed for the project.
- ☐ Any speed reduction and/or \$250.00 penalty ordinance as coordinated with field personnel and the Regional Traffic Engineer.

Submittal Package:

Submit the Pre-Final TMP to the WZTC Project Design Engineer for review and approval no later than the date agreed upon at the TMP-Scoping Meeting. If the project schedule has changed since the TMP-Scoping Meeting, contact the WZTC Project Design Engineer to discuss if the submittal date may be adjusted. Typically this submittal shall be made prior to the Pre-Let Field Inspection.

Approval of this submittal will complete the 3rd submittal of the Transportation Management Plan.

(PEF ONLY) Payment beyond the Pre-Final TMP will not be approved until after the Pre-Let Field Inspection.

8.5 4th Submittal – Final**I. PURPOSE:**

The 4th Submittal shall consist of the final TMP developed from the previous submittal.

II. SUBMITTAL REQUIREMENT:

The TMP submitted at this time should be complete and include the following:

- ☐ Completed Transportation Management Plan with all revisions incorporated as requested from the pre-final submittal as well as any changes from Field Inspection meetings.
- ☐ Final Traffic Control quantity estimate. (Submit all final calculations and / or worksheets providing the basis for the estimate quantities submitted).
- ☐ A Full Sized electronically sealed .pdf and all electronic drawings and documents of the Final Traffic Control Plan, including any Project Special Provisions and ICT's. (Include all electronic files that plan sheets are referenced to and dependent upon for accurate representation). (Applies to PEF)
- ☐ NOTE: Electronic data may be delivered on a CD/DVD or through the FTS (File Transfer System) established by the NCDOT. (Applies to PEF)
- ☐ All correspondence with other units or agencies relating to the Transportation Management Plan.
- ☐ Return any borrowed materials previously provided by NCDOT, if applicable. (applies to PEF)
- ☐ User Cost Package (WZTC plan developers ONLY).

Submittal Package:

Submit the final TMP to the WZTC Project Design Engineer for review no later than the date agreed upon at the TMP - Scoping Meeting. If the project schedule has changed since the TMP – Scoping Meeting, contact the WZTC Project Design Engineer to discuss if the submittal date may be adjusted.

Approval of this submittal will complete 100% of the Transportation Management Plan.

8.6 Project Turn-In

Turn the following into the Roadway Project Engineer / Squad Leader in Roadway Design or Project Services:

Submittal Package:

- ☐ Electronically Signed/Sealed full size Transportation Management Plan in .pdf format placed in proper folder on the “Project Store” (Project Server).
- ☐ Full Size hard copy of TMP generated from the Signed/Sealed .pdf.
- ☐ Completed and signed Final Transportation Management Plans submittal letter which contains a listing of any attachments and Roadway Pay Item quantities required for Temporary Pavement, Temporary Shoring and Temporary Guardrail.
- ☐ Copy of Transport Quantity Estimate.
- ☐ Copy of Force Account Estimate, if applicable. (Include in Transport)
- ☐ Copy of any Intermediate Contract Times (ICT).
- ☐ Copy of any Project Special Provisions. (Electronically Signed/Sealed)

Final Procedures:

- Distribute copies of appropriate plans (pdf), and data per the Final TMP Submittal letter.
- Purge project folder(s) and file.
- Finalize the Project User Cost Package, if necessary and turn-in to appropriate WZTC personnel.